

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA19 | Coleshill Junction

Baseline (SV-002-019)

Sound, noise and vibration

November 2013

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Department for Transport

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Appendix SV-002-019

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Baseline	002
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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas.
- 1.1.2 For the Coleshill Junction area (CFA19), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-019) (this appendix);
 - construction sound, noise and vibration (Appendix SV-003-019); and
 - operational sound, noise and vibration (Appendix SV-004-019).
- 1.1.3 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 map book.
- 1.1.4 This appendix includes details of the existing and future baseline sound environment within the area. It provides details of measurements and any other data collection which has been undertaken in order to obtain existing and future baseline sound levels.

1.2 Existing acoustic environment

- 1.2.1 The study area is predominantly urban and urban fringe in character, separated by small linear strips of green belt that flank the major transport routes. The M42 and the M6 run north-south through the area with a major west-east connection/interchange arrangement to the south of Water Orton and west of Gilson. Coleshill, the main town in the study area, is approximately 500m to the east of the Proposed Scheme. Due to the presence of these major roads, the acoustic climate in the study area is generally dominated by continuous road traffic noise. Due to these dominant sources, night-time sound levels generally remain high. Local neighbourhood sound sources and agricultural sources are also audible in the less urban parts of this area.
- 1.2.2 In the residential area of Water Orton, the noise climate is dominated by continuous distant road traffic noise from the M42, M6 and A452, during both day and night-time periods. Local traffic on B4117 (New Road) and B4118 (Birmingham Road) also contributes to the soundscape, as well as the passage of trains on the Birmingham-Leicester line north of Water Orton. Close to these roads, typical baseline noise levels range from 55 to 60dB¹ during daytime, reducing to 50 to 55dB² at night-time. In the agricultural areas surrounding Water Orton, the soundscape is characterised by road traffic noise with occasional contribution from natural noise sources, local road traffic and aviation noise. Baseline noise levels during the daytime in these areas are generally 55 to 60dB¹ and 50 to 55dB² at night.

¹ 16-hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, $L_{pAeq,16hr}$.

² 8-hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, $L_{pAeq,8hr}$.

- 1.2.3 In the residential area of Coleshill, the noise climate is dominated by distant road traffic noise from the M42 and the adjacent A446 Lichfield Road which runs along the western edge of the town, together with community noise (local road traffic noise and normal every day residential activities). Baseline noise levels during the daytime in these areas are generally 60 to 65dB³ and 55 to 60dB⁴ at night. In residential areas south of Coleshill Industrial Estate, which are located further away from the M42, the typical baseline noise levels are 55dB³ during the day and 50dB⁴ at night.
- 1.2.4 Within Smith's Wood, which lies to the south of Water Orton on the south-western side of the M6, the noise climate is dominated by distant road traffic noise from the M42 together with community noise due to local road traffic noise and normal every day residential activities. Baseline noise levels during the daytime in these areas are generally 60 to 65dB³ and 55 to 60dB⁴ at night.
- 1.2.5 In the agricultural areas between the M6 and M42 the soundscape is dominated by distant road traffic. Baseline noise levels during the daytime in these areas are generally 65 to 70dB³ and 60 to 65dB⁴ at night.

³ 16-hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, $L_{pAeq,16hr}$.

⁴ 8-hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, $L_{pAeq,8hr}$.

2 Scope, assumptions and limitations

2.1 Sound and vibration sensitive receptors

2.1.1 Within the Coleshill Junction CFA, 186 assessment locations have been defined to represent all sound and vibration sensitive receptors within the spatial scope. The assessment locations are shown on the detailed maps in map series SV-03 and SV-04 (Volume 5 CFA19 map book). Within this area, the following types of sound and vibration sensitive receptors have been identified:

- residential areas;
- education facilities;
- community centres and meeting facilities;
- places of worship; and
- hotels.

2.2 Local engagement

2.2.1 Meetings have been held with representatives of North Warwick District Council regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors and the selection of assessment locations.

2.2.2 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this appendix.

2.2.3 Representatives of North Warwick District Council have also attended baseline sound measurements in this area and witnessed the measurement procedures used.

2.2.4 Local engagement through community forum meetings has also provided the opportunity for local groups to suggest appropriate baseline sound monitoring locations. Any suggestions received from these groups have been considered and influenced the monitoring undertaken and reported in this document.

2.3 Existing baseline sound monitoring locations

2.3.1 Baseline monitoring locations have been defined in order to provide representative sound levels at each assessment location within the study area.

2.3.2 Baseline information has been gathered incrementally through successive rounds of field surveys focused on locations where likely significant effects are forecast.

2.3.3 Areas within the study area where baseline data is required have been broken down into a series of smaller sub-areas. Each of these is representative of clusters of receptors where the noise climate is influenced by the same sound sources. Within each of the sub-areas, a programme of unattended monitoring has been undertaken, supplemented by attended measurements to ensure good coverage at all the identified sound assessment locations. All attended measurements have been undertaken simultaneously with the unattended measurements to allow a direct comparison between assessment locations to be established.

- 2.3.4 After each successive round of field surveys, the collected data has been analysed, and based upon feedback from on-going stakeholder dialogue, the measurement locations refined for subsequent rounds.
- 2.3.5 Across the study area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to support the assessments.
- 2.3.6 Maps showing the baseline sound monitoring locations and assessment locations within this area are included in map series SV-03 and SV-04 (Volume 5 CFA19 map book).

3 Environmental baseline

3.1 Existing baseline data collection methodology

- 3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Appendix SV-001-000.
- 3.1.2 Over the Coleshill Junction area, a large number of baseline sound measurements have been undertaken. These have been classified as follows:
- 7 long-term measurements – unattended measurements of several days duration; and
 - 36 short-term measurements – attended measurements typically of 30 minutes duration (generally repeated at different times of day).
- 3.1.3 In Water Orton, a continuous long-term measurement was carried out on agricultural land south of Vicarage Lane. This location is considered representative of the noise sensitive receptors located on the southern edge of Water Orton. This long-term measurement was supplemented with a series of satellite measurements carried out during both day and night-time periods at nearby noise sensitive receptors located on the outskirts of Water Orton, namely on Vicarage Lane, Coleshill Road, St Peter's Close and St Blaise Ave. Additional short-term measurements were also taken at residential properties on Watton Lane, New Road, George Road and Edward Road to investigate the sound climate in the more central residential areas. To investigate the existing baseline noise levels in the agricultural farmland to the west of Water Orton, a long-term noise monitoring position was set up along Attleboro Lane, while short-term measurements were carried out at noise sensitive receptors along Birmingham Road and Attleboro Lane. All satellite monitoring locations were visited at several times of the day and night and were undertaken simultaneously with the longer duration monitoring to allow good correlation between the two locations.
- 3.1.4 In the northern urban area of Coleshill, the noise climate is dominated by road traffic noise from the A446. As a consequence, a long-term measurement was undertaken in the vicinity of this road, while simultaneous short-term measurements were carried out at noise sensitive receptors with a similar noise climate. Satellite noise measurement positions were located on Brutus Drive, Norton Road and Ennersdale Road. Further long-term measurements were undertaken within the northern residential areas of Coleshill, namely at noise sensitive properties on Centurion Close. This measurement was supplemented by simultaneous short-term measurements on Imperial Rise, Norton Road and Ennersdale Close.
- 3.1.5 In the rural area to the west of Coleshill, between the M42 and the A446 a long-term noise monitoring position was located in the vicinity of Gilson Road. Further short-term measurements were undertaken during both day and night-time periods at noise sensitive receptors on Gilson Drive and Gilson Road.
- 3.1.6 To investigate the noise climate in the area surrounding the Coleshill Industrial Estate, located to the north of the main residential area of Coleshill, seven day unattended baseline sound monitoring has been carried out at noise sensitive receptors along Chattle Hill, supplemented with simultaneous short-term satellite measurements

carried out within the industrial estate at several times of day and night on Gorsey Lane and Roman Way.

- 3.1.7 In the southern part of Coleshill, baseline measurements have been undertaken in the residential areas between the A446 and Coventry Road to the east. Long-term noise monitoring positions were set up near two noise sensitive properties on agricultural land on the western side of the A446. Satellite measurements were undertaken in the residential area adjacent to B4114 Birmingham Road, at the junction of Castle Drive and Green Lane near A446 Stonebridge Road and at the southern end of B4117 Coventry Road. Two additional short-term measurements were carried out in the vicinity of residential properties adjacent to Lichfield Road. At residential properties away from the main transportation routes, satellite monitoring was also undertaken adjacent to Old Mill Road, Parkfield Road, Springfields and Colemeadow Road.

3.2 Existing baseline sound levels

- 3.2.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:

- Baseline levels used for the operational sound assessment:
 - $L_{pAeq,16hr\text{ weekday}}$ daytime (07:00-23:00) sound pressure level;
 - $L_{pAeq,8hr\text{ weekday}}$ night-time (23:00-07:00) sound pressure level;
 - arithmetic average of $L_{pAFmax,5min}$ night-time sound pressure level; and
 - highest $L_{pAFmax,5min}$ night-time sound pressure level.
- Baseline levels used for the construction sound assessment:
 - Daytime L_{pAeq} sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00); and
 - Evening / weekend L_{pAeq} sound pressure level (Monday to Friday 19:00-23:00; Saturday 13:00-23:00; Sunday 07:00-23:00).
- Night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00-07:00).

- 3.2.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Appendix SV-001-000.

Table 1: Existing baseline sound levels

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
100887	Birmingham Road, Coleshill, Birmingham	CN169S	64.3	57.5	63.2	82.0	65.1	61.3	57.9	2,C,ii,b
101811	South Drive, Coleshill, Birmingham	CN162S	55.6	53.8	50.8	51.0	56.8	53.3	53.2	2,C,ii,b
102917	Rose Road, Coleshill, Birmingham	CN095S	56.5	50.7	69.2	71.8	56.9	56.3	50.4	2,BC,ii,c
103082	Norton Road, Coleshill, Birmingham	CN021L	57.6	52.6	60.9	68.8	58.0	57.5	52.3	1,C,ii,b
110175	Auckland Drive, Birmingham	WM0308	63.5	61.7	74.8	81.5	64.1	63.5	61.7	4,A,ii,c
110201	Auckland Drive, Birmingham	WM0307	62.4	61.7	74.8	81.5	63.0	62.4	61.7	4,A,ii,c
110247	Red Wing Walk, Birmingham	WM0307	62.4	61.7	74.8	81.5	63.0	62.4	61.7	4,A,ii,c
123472	Gilson Drive, Coleshill, Birmingham	CN162S	61.6	59.8	61.8	62.0	62.8	59.3	59.2	2,BC,ii,b
123516	Gilson Drive, Coleshill, Birmingham	CN162S	59.6	57.8	57.8	58.0	60.8	57.3	57.2	2,B,ii,b
124210	Stonebridge Road, Coleshill, Birmingham	CN170S	73.8	66.8	-	80.0	74.5	70.8	66.8	2,C,ii,c
124229	Stonebridge Road, Coleshill, Birmingham	CN170S	76.8	69.8	-	86.0	77.5	73.8	69.8	2,C,ii,c
124677	Stonebridge Road, Coleshill, Birmingham	CN101S	65.8	59.7	-	78.0	66.6	62.8	59.8	2,B,ii,c
124748	Hall Walk, Coleshill, Birmingham	CN101S	61.8	55.7	-	76.0	62.6	58.8	55.8	2,C,ii,c
124821	Stonebridge Road, Coleshill, Birmingham	CN045S	66.3	56.7	59.7	62.7	66.9	63.7	56.2	2,BC,ii,c
124879	Springfields, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,C,ii,c
124910	Stonebridge Road, Coleshill, Birmingham	CN046S	72.9	67.5	77.4	82.4	73.4	70.1	66.9	2,C,ii,b

⁵ Table 2 provides a data source coding key.

Appendix SV-002-019 | Environmental baseline

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
124940	Lawnsdale Close, Coleshill, Birmingham	CNo45S	66.3	56.7	59.7	62.7	66.9	63.7	56.2	2,BC,ii,b
125027	Birmingham Road, Coleshill, Birmingham	CNo98S	59.4	53.0	75.2	77.8	59.8	59.3	52.7	2,B,ii,b
125076	Parkfield Road, Coleshill, Birmingham	CNo99S	61.3	56.6	-	64.0	62.1	58.3	56.3	2,A,i,b
125248	Birmingham Road, Coleshill, Birmingham	CNo45S	66.3	56.7	59.7	62.7	66.9	63.7	56.2	2,BC,ii,c
125255	Chelmsley Avenue, Coleshill, Birmingham	CNo99S	61.3	56.6	72.6	82.1	62.1	58.3	56.3	2,A,i,b
125368	Wingfield Road, Coleshill, Birmingham	CNo99S	59.3	54.6	-	66.0	60.1	56.3	54.3	2,BC,ii,c
125488	Digby Road, Coleshill, Birmingham	CNo99S	61.3	56.6	-	64.0	62.1	58.3	56.3	2,BC,ii,c
125530	Digby Road, Coleshill, Birmingham	CNo62L	66.5	60.7	72.6	82.1	67.3	63.5	60.4	2,C,ii,c
125685	Wingfield Road, Coleshill, Birmingham	CNo99S	57.3	52.6	-	66.0	58.1	54.3	52.3	2,BC,ii,c
125722	Wall Avenue, Coleshill, Birmingham	CNo99S	55.3	54.6	-	60.0	56.1	52.3	54.3	2,C,ii,c
125802	Wingfield Road, Coleshill, Birmingham	CNo99S	61.3	56.6	-	64.0	62.1	58.3	56.3	2,C,ii,c
125872	Digby Road, Coleshill, Birmingham	CNo62L	66.5	60.7	72.6	82.1	67.3	63.5	60.4	2,BC,ii,c
126150	Green Lane, Coleshill, Birmingham	CNo45S	57.3	52.7	57.7	60.7	57.9	54.7	52.2	2,C,ii,c
126285	Castle Drive, Coleshill, Birmingham	CN100S	56.7	53.6	-	62.0	57.5	53.7	53.7	2,BC,ii,c
126386	Stonebridge Road, Coleshill, Birmingham	CNo45S	65.3	56.7	59.7	62.7	65.9	62.7	56.2	2,BC,ii,c
126584	Birmingham Road, Coleshill, Birmingham	CNo44S	63.2	59.0	72.5	73.6	63.2	59.9	58.8	2,BC,ii,b
126717	Birmingham Road, Coleshill, Birmingham	CNo44S	65.2	61.0	76.5	77.6	65.2	61.9	60.8	2,BC,ii,b
126837	Wingfield Road, Coleshill, Birmingham	CN100S	59.7	56.6	-	68.0	60.5	56.7	56.7	2,B,ii,c
127026	Chamberlain Walk, High Street, Coleshill, Birmingham	CNo99S	61.3	56.6	-	64.0	62.1	58.3	56.3	2,A,i,b

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
127102	High Street, Coleshill, Birmingham	CN097S	67.0	62.2	78.8	84.0	67.4	66.8	62.0	2,A,i,b
127157	Penns Lane, Coleshill, Birmingham	CN097S	52.0	47.2	68.8	74.0	52.4	51.8	47.0	2,BC,ii,b
127299	Ravenswood Hill, Coleshill, Birmingham	CN098S	59.4	53.0	75.2	77.8	59.8	59.3	52.7	2,B,ii,b
127465	High Brink Road, Coleshill, Birmingham	CN096S	58.6	54.2	64.1	65.8	59.0	58.5	53.9	2,B,ii,c
127569	Duncombe Green, Coleshill, Birmingham	CN021L	63.6	58.6	67.9	75.8	64.0	63.5	58.3	1,C,ii,b
127648	High Brink Road, Coleshill, Birmingham	CN096S	54.6	50.2	56.1	57.8	55.0	54.5	49.9	2,BC,ii,c
127852	Wood Close, Coleshill, Birmingham	CN097S	52.0	47.2	68.8	74.0	52.4	51.8	47.0	2,BC,ii,b
128055	High Brink Road, Coleshill, Birmingham	CN021L	62.6	57.6	65.9	73.8	63.0	62.5	57.3	1,A,i,b
128147	Prossers Walk, Coleshill, Birmingham	CN097S	67.0	62.2	78.8	84.0	67.4	66.8	62.0	2,A,i,b
128186	Old Mill Road, Coleshill, Birmingham	CN096S	54.6	50.2	56.1	57.8	55.0	54.5	49.9	2,BC,ii,c
128494	Lichfield Road, Coleshill, Birmingham	CN095S	60.5	54.7	73.2	75.8	60.9	60.3	54.4	2,C,ii,b
128508	Doris Road, Coleshill, Birmingham	CN094S	58.7	50.7	55.8	57.3	59.1	59.1	49.9	2,C,ii,c
128785	Doris Road, Coleshill, Birmingham	CN095S	59.5	53.7	72.2	74.8	59.9	59.3	53.4	2,BC,ii,c
128828	Lichfield Road, Coleshill, Birmingham	CN095S	63.5	60.7	79.2	81.8	63.9	63.3	60.4	2,C,ii,b
128960	Grimstock Hill, Lichfield Road, Coleshill, Birmingham	CN168S	62.1	59.4	65.4	75.0	62.9	59.6	58.7	1,C,ii,b
129075	Norton Road, Coleshill, Birmingham	CN167S	57.4	52.1	64.6	69.0	58.6	55.7	51.5	2,C,ii,c
129230	Ennersdale Road, Coleshill, Birmingham	CN167S	55.4	52.1	64.6	69.0	56.6	53.7	51.5	2,A,i,b
129369	Gilson Road, Coleshill, Birmingham	CN161S	66.3	55.1	57.5	63.0	67.5	64.0	54.5	2,C,ii,c
129547	Parkfield Road, Coleshill, Birmingham	CN098S	61.4	55.0	73.2	75.8	61.8	61.3	54.7	2,C,ii,b

Appendix SV-002-019 | Environmental baseline

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
129852	High Street, Coleshill, Birmingham	CN099S	55.3	50.6	-	62.0	56.1	52.3	50.3	2,BC,ii,c
130518	Gorsey Lane, Coleshill, Birmingham	CN164S	62.4	59.4	-	63.0	63.2	61.8	59.3	2,B,ii,c
130843	Gorsey Lane, Coleshill, Birmingham	CN163S	54.9	54.1	-	65.0	55.8	54.4	53.6	1,C,ii,b
130991	Gorsey Lane, Coleshill, Birmingham	CN163S	52.9	52.1	-	61.0	53.8	52.4	51.6	2,B,ii,b
131458	Roman Way, Coleshill, Birmingham	CN165S	56.8	53.3	-	64.0	57.6	56.2	53.0	2,B,ii,b
131741	Ennersdale Road, Coleshill, Birmingham	CN167S	55.4	52.1	64.6	69.0	56.6	53.7	51.5	2,A,i,b
132786	Lichfield Road, Water Orton, Birmingham	CN039S	68.0	61.7	84.7	91.4	69.0	66.6	61.1	2,BC,ii,c
136640	Birmingham Road, Water Orton, Birmingham	CN041S	67.7	57.3	77.1	80.6	68.7	66.3	56.7	2,C,ii,b
136661	Birmingham Road, Water Orton, Birmingham	CN041S	67.7	57.3	77.1	80.6	68.7	66.3	56.7	2,C,ii,b
136721	Hillcrest, Birmingham Road, Water Orton, Birmingham	CN041S	67.7	57.3	77.1	80.6	68.7	66.3	56.7	2,C,ii,c
136779	Alvis Walk, Birmingham	WM0303	61.4	53.9	63.1	67.1	62.0	57.9	53.9	4,A,ii,c
137393	Marcos Drive, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
137517	Alvis Walk, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
137618	Alvis Walk, Birmingham	WM0306	61.1	55.3	63.1	64.1	61.7	57.6	55.3	4,A,i,c
137633	Lanchester Way, Birmingham	WM0306	61.1	55.3	63.1	64.1	61.7	57.6	55.3	4,A,ii,c
137672	Lanchester Way, Birmingham	WM0305	67.5	57.3	66.0	67.7	68.0	64.0	57.3	4,A,ii,c
137690	Rover Drive, Castle Bromwich	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
137708	Rover Drive, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
137834	Rover Drive, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,i,c

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
138204	Cowley Close, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
138225	Elva Croft, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
138301	Lanchester Way, Birmingham	WM0305	67.5	57.3	66.0	67.7	68.0	64.0	57.3	4,A,i,c
138363	Humber Grove, Birmingham	WM0301	66.1	57.4	67.0	89.1	66.6	62.6	57.4	4,A,i,c
138398	Rover Drive, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
138437	Triumph Walk, Birmingham	WM0309	61.1	58.5	62.2	68.9	61.7	61.1	58.5	4,A,ii,c
138485	Morgan Grove, Birmingham	WM0310	58.5	56.5	60.4	64.9	59.1	58.5	56.5	4,A,ii,c
139373	Lanchester Way, Birmingham	WM0303	61.4	53.9	63.1	67.1	62.0	57.9	53.9	4,A,ii,c
139659	Mytton Road, Water Orton, Birmingham	CN041S	66.7	59.3	82.1	85.6	67.7	65.3	58.7	2,BC,ii,b
139772	Vicarage Lane, Water Orton, Birmingham	CN158S	59.5	55.6	61.5	74.0	60.1	57.8	55.7	1,A,i,b
139831	Vicarage Lane, Water Orton, Birmingham	CN158S	59.5	55.6	61.5	74.0	60.1	57.8	55.7	1,A,i,b
139889	Vicarage Lane, Water Orton, Birmingham	CN058L	50.1	48.1	57.2	70.0	51.2	49.3	47.8	1,C,ii,b
139929	Attleboro Lane, Water Orton, Birmingham	CN159S	54.2	49.9	59.0	60.0	55.1	53.5	49.6	2,BC,ii,c
140067	Vicarage Lane, Water Orton, Birmingham	CN158S	56.5	52.6	61.5	74.0	57.1	54.8	52.7	2,B,ii,c
140133	Weland Close, Water Orton, Birmingham	CN157S	52.1	49.0	51.7	57.0	52.7	50.6	49.2	2,BC,ii,c
140180	Vicarage Lane, Water Orton, Birmingham	CN019L	54.5	51.3	57.0	77.5	54.9	53.8	51.4	1,A,i,b
140403	Vicarage Lane, Water Orton, Birmingham	CN090S	53.5	50.4	56.2	59.4	54.8	54.3	51.2	2,B,ii,c
140636	Plank Lane, Water Orton, Birmingham	CN159S	52.2	47.9	55.0	56.0	53.1	51.5	47.6	2,BC,ii,c
140857	St. Peters Close, Water Orton, Birmingham	CN157S	53.1	50.0	53.7	59.0	53.7	51.6	50.2	2,BC,ii,c

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Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
141182	St. Blaise Avenue, Water Orton, Birmingham	CN09oS	53.5	50.4	56.2	59.4	54.8	54.3	51.2	2,B,ii,c
141246	Attleboro Lane, Water Orton, Birmingham	CN058L	55.1	53.1	56.2	69.0	56.2	54.3	52.8	2,C,ii,c
141274	Birmingham Road, Water Orton, Birmingham	CN16oS	67.8	61.8	82.4	88.0	68.8	67.1	61.5	2,BC,ii,b
141354	Plank Lane, Water Orton, Birmingham	CN041S	59.7	56.3	76.1	79.6	60.7	58.3	55.7	2,BC,ii,b
141408	Rover Drive, Birmingham	WM0301	66.1	57.4	67.0	89.1	66.6	62.6	57.4	4,A,ii,c
141456	Triumph Walk, Birmingham	WM0301	66.1	57.4	67.0	89.1	66.6	62.6	57.4	4,A,i,c
141697	Wolseley Close, Birmingham	WM0310	58.5	56.5	60.4	64.9	59.1	58.5	56.5	4,A,ii,c
141762	Lanchester Way, Birmingham	WM0302	65.2	60.0	67.0	79.8	65.8	65.2	60.0	4,A,ii,c
141950	Wolseley Close, Birmingham	WM0310	58.5	56.5	60.4	64.9	59.1	58.5	56.5	4,A,ii,c
141965	Morgan Grove, Birmingham	WM0310	58.5	56.5	60.4	64.9	59.1	58.5	56.5	4,A,ii,c
142052	Lanchester Way, Birmingham	WM0308	63.5	61.7	74.8	81.5	64.1	63.5	61.7	4,A,ii,c
142117	Attleboro Lane, Water Orton, Birmingham	CN058L	63.1	61.1	67.2	80.0	64.2	62.3	60.8	1,C,ii,c
142895	Birmingham Road, Water Orton, Birmingham	CN16oS	67.8	61.8	82.4	88.0	68.8	67.1	61.5	2,BC,ii,b
143029	Birmingham Road, Water Orton, Birmingham	CN16oS	64.8	61.8	82.4	88.0	65.8	64.1	61.5	2,BC,ii,b
143824	Smiths Way, Water Orton, Birmingham	CN16oS	63.8	57.8	80.4	86.0	64.8	63.1	57.5	2,BC,ii,b
146143	Openfield Croft, Water Orton, Birmingham	CN155S	65.8	61.8	78.4	82.0	67.2	64.7	62.0	1,B,ii,c
146211	Coleshill Road, Water Orton, Birmingham	CN155S	65.8	61.8	78.4	82.0	67.2	64.7	62.0	2,BC,ii,b
146284	St. Blaise Avenue, Water Orton, Birmingham	CN09oS	53.5	50.4	56.2	59.4	54.8	54.3	51.2	2,B,ii,c
146312	St. Blaise Avenue, Water Orton, Birmingham	CN09oS	53.5	50.4	56.2	59.4	54.8	54.3	51.2	2,B,ii,c

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
146361	Vicarage Lane, Water Orton, Birmingham	CNo90S	53.5	50.4	56.2	59.4	54.8	54.3	51.2	2,B,ii,c
146424	Coleshill Road, Water Orton, Birmingham	CN155S	62.8	61.8	78.4	82.0	64.2	61.7	62.0	2,B,ii,c
146469	Coleshill Road, Water Orton, Birmingham	CN156S	47.3	46.5	56.8	65.0	48.0	46.0	46.6	2,B,ii,c
146557	Watton Lane, Water Orton, Birmingham	CNo40S	59.1	52.9	68.0	72.7	60.2	57.8	52.2	2,BC,ii,b
146620	Watton Lane, Water Orton, Birmingham	CNo39S	70.0	63.7	79.7	86.4	71.0	68.6	63.1	2,C,ii,b
146638	Watton Lane, Water Orton, Birmingham	CNo39S	70.0	63.7	79.7	86.4	71.0	68.6	63.1	2,C,ii,b
146728	143 Coleshill Road, Water Orton, Birmingham	CN156S	53.3	52.5	62.8	71.0	54.0	52.0	52.6	2,BC,ii,c
146783	Watton Lane, Water Orton, Birmingham	CNo89S	53.7	51.3	57.3	65.4	55.0	54.5	52.1	2,A,i,c
146840	Gilson Road, Coleshill, Birmingham	CNo43S	68.2	65.2	70.2	74.0	69.4	65.8	64.7	2,A,i,b
146872	Gilson Road, Coleshill, Birmingham	CNo43S	62.2	59.2	64.2	68.0	63.4	59.8	58.7	2,BC,ii,b
146917	Gilson Road, Coleshill, Birmingham	CNo43S	64.2	61.2	68.2	72.0	65.4	61.8	60.7	2,BC,ii,b
146954	Gilson Road, Coleshill, Birmingham	CNo59L	59.8	59.0	70.7	82.5	61.4	57.9	57.5	2,BC,ii,b
146974	Gilson Road, Coleshill, Birmingham	CNo59L	60.8	60.0	72.7	84.5	62.4	58.9	58.5	2,BC,ii,b
147008	Meadowbank Drive, Coleshill, Birmingham	CNo43S	62.2	59.2	64.2	68.0	63.4	59.8	58.7	2,BC,ii,b
147038	New Road, Water Orton, Birmingham	CN155S	65.8	58.8	78.4	82.0	67.2	64.7	59.0	2,BC,ii,b
147174	Marsh Lane, Water Orton, Birmingham	CNo38S	63.4	62.3	51.6	60.5	64.5	62.8	61.7	2,C,i,b
147318	George Road, Water Orton, Birmingham	CNo39S	68.0	63.7	79.7	86.4	69.0	66.6	63.1	2,A,i,c
147332	Maud Road, Water Orton, Birmingham	CNo39S	63.0	62.7	77.7	84.4	64.0	61.6	62.1	2,C,ii,c
147380	Maud Road, Water Orton, Birmingham	CNo39S	62.0	60.7	73.7	80.4	63.0	60.6	60.1	2,BC,ii,b

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Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
147389	George Road, Water Orton, Birmingham	CNo89S	56.7	54.3	63.3	71.4	58.0	57.5	55.1	2,C,ii,c
147442	George Road, Water Orton, Birmingham	CNo89S	53.7	51.3	57.3	65.4	55.0	54.5	52.1	2,A,i,c
147501	Maud Road, Water Orton, Birmingham	CNo89S	55.7	53.3	61.3	69.4	57.0	56.5	54.1	2,C,ii,c
147577	George Road, Water Orton, Birmingham	CNo89S	53.7	51.3	57.3	65.4	55.0	54.5	52.1	2,A,ii,c
147659	Maud Road, Water Orton, Birmingham	CNo89S	59.7	57.3	63.3	71.4	61.0	60.5	58.1	2,BC,ii,c
147698	Watton Lane, Water Orton, Birmingham	CNo89S	54.7	51.3	57.3	65.4	56.0	55.5	52.1	2,C,ii,c
147739	Park Grove, Water Orton, Birmingham	CNo89S	52.7	50.3	55.3	63.4	54.0	53.5	51.1	2,C,ii,c
147805	Overton Drive, Water Orton, Birmingham	CN154S	58.5	50.4	56.5	58.0	59.3	56.9	50.5	2,C,ii,c
147930	Salisbury Drive, Water Orton, Birmingham	CN154S	52.5	44.4	50.5	52.0	53.3	50.9	44.5	2,BC,ii,b
148027	Overton Drive, Water Orton, Birmingham	CN154S	52.5	44.4	50.5	52.0	53.3	50.9	44.5	2,BC,ii,b
148102	Marsh Lane, Water Orton, Birmingham	CNo38S	65.4	64.3	55.6	64.5	66.5	64.8	63.7	2,A,i,b
149230	Gilson Road, Coleshill, Birmingham	CN161S	66.3	55.1	57.5	63.0	67.5	64.0	54.5	2,C,ii,c
149268	Grimstock Hill, Lichfield Road, Coleshill, Birmingham	CN161S	66.3	55.1	57.5	63.0	67.5	64.0	54.5	1,BC,i,b
149292	Norton Road, Coleshill, Birmingham	CNo93S	57.8	53.4	54.0	55.7	69.2	64.6	64.3	2,B,ii,b
149315	Norton Road, Coleshill, Birmingham	CN168S	57.1	54.4	61.4	71.0	57.9	54.6	53.7	2,BC,ii,b
149507	Arden Croft, Coleshill, Birmingham	CNo61L	56.1	53.1	60.3	77.4	57.0	54.0	52.5	2,A,i,b
149550	Norton Road, Coleshill, Birmingham	CNo93S	54.8	50.4	53.0	54.7	66.2	61.6	61.3	2,A,i,b
149648	Bateman Road, Coleshill, Birmingham	CN167S	55.4	52.1	64.6	69.0	56.6	53.7	51.5	2,A,i,b
149951	Tiberius Close, Coleshill, Birmingham	CN168S	54.1	51.4	60.4	70.0	54.9	51.6	50.7	2,A,i,b

Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/Weekend L _{pAeq}	Night-time L _{pAeq}	
150059	Trajan Hill, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	2,A,i,b
150077	Lichfield Road, Coleshill, Birmingham	CNo6oL	52.6	49.7	59.4	77.3	53.4	52.1	49.3	1,A,i,b
150225	Temple Way, Coleshill, Birmingham	CNo2oL	65.3	60.3	74.9	79.8	65.7	63.2	59.6	1,C,i,b
150270	Brutus Drive, Coleshill, Birmingham	CNo2oL	66.3	61.3	75.9	80.8	66.7	64.2	60.6	1,C,i,b
150547	Julius Drive, Coleshill, Birmingham	CNo61L	55.1	52.1	58.3	75.4	56.0	53.0	51.5	2,B,i,b
150633	Temple Way, Coleshill, Birmingham	CNo61L	57.1	54.1	62.3	79.4	58.0	55.0	53.5	2,A,i,b
150711	Constantine Lane, Coleshill, Birmingham	CN166S	55.8	51.1	60.5	76.0	56.4	53.2	50.5	2,A,i,b
150789	Temple Way, Coleshill, Birmingham	CN166S	55.8	51.1	60.5	76.0	56.4	53.2	50.5	2,A,i,b
151087	Station Road, Coleshill, Birmingham	CN164S	62.4	59.4	-	63.0	63.2	61.8	59.3	2,B,ii,b
151656	Roman Way, Coleshill, Birmingham	CN165S	65.8	62.3	-	70.0	66.6	65.2	62.0	2,B,ii,b
151756	Roman Way, Coleshill, Birmingham	CN166S	54.8	51.1	60.5	76.0	55.4	52.2	50.5	2,A,i,b
151902	Roman Way, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	2,C,ii,b
151974	Chattle Hill, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	1,C,i,b
152014	Chattle Hill, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	1,C,i,b
152035	Gorsey Way, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	1,C,i,b
152426	Imperial Rise, Coleshill, Birmingham	CNo2oL	72.3	67.3	81.9	86.8	72.7	70.2	66.6	1,A,i,b
152447	Imperial Rise, Coleshill, Birmingham	CN092S	54.8	45.2	62.8	70.2	55.2	55.6	44.5	2,A,i,b
152464	Chattle Hill, Coleshill, Birmingham	CNo6oL	55.6	52.7	59.4	77.3	56.4	55.1	52.3	1,A,i,b
154000	Station Road, Coleshill, Birmingham	CN094S	58.7	50.7	55.8	57.3	59.1	59.1	49.9	2,C,ii,c

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Assessment location ID	Area represented	Measurement location	Existing baseline sound level (dB)							Data source coding ⁵
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ Weekend L _{pAeq}	Night-time L _{pAeq}	
154074	Roman Park, Coleshill, Birmingham	CN061L	52.1	49.1	52.3	69.4	53.0	50.0	48.5	2,B,ii,b
183917	Stonebridge Road, Coleshill, Birmingham	CN170S	73.8	66.8	-	80.0	74.5	70.8	66.8	2,C,ii,c
184560	Coventry Road, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,BC,ii,c
184849	Coventry Road, Coleshill, Birmingham	CN046S	65.9	60.5	68.4	73.4	66.4	63.1	59.9	2,C,ii,c
185489	Burman Drive, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	57.5	53.7	53.7	2,BC,ii,c
187808	Station Road, Coleshill, Birmingham	CN094S	56.7	48.7	53.8	55.3	57.1	57.1	47.9	2,C,ii,c
700640	Packington Lane, Coleshill, Birmingham	CN046S	63.9	58.5	64.4	69.4	64.4	61.1	57.9	2,C,iii,c
700641	Packington Lane, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,A,i,c
701086	Coventry Road, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,A,i,c
701087	Coventry Road, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,A,i,c
701088	Coventry Road, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,A,i,c
701089	Wingfield Road, Coleshill, Birmingham	CN101S	59.8	53.7	-	72.0	60.6	56.8	53.8	2,A,i,c
701084	South Drive, Coleshill, Birmingham	CN162S	55.6	53.8	50.8	51.0	56.8	53.3	53.2	2,BC,ii,b
701085	Gilson Drive, Coleshill, Birmingham	CN162S	55.6	53.8	50.8	51.0	56.8	53.3	53.2	2,BC,ii,b
710219	Gilson Drive, Coleshill, Birmingham	CN162S	58.6	56.8	49.8	50.0	59.8	56.3	56.2	2,C,ii,b
710921	Station Road, Coleshill, Birmingham	CN095S	63.5	60.7	79.2	81.8	63.9	63.3	60.4	2,A,i,c
721005	Gilson Road, Coleshill, Birmingham	CN161S	66.3	55.1	57.5	63.0	67.5	64.0	54.5	2,C,ii,b
721006	Gilson Road, Coleshill, Birmingham	CN161S	66.3	55.1	57.5	63.0	67.5	64.0	54.5	2,C,ii,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location
2	Short-term (linked to simultaneous long-term)
3	Short-term (using profile from non-simultaneous long-term)
4	Short-term using standard (National Noise Incidence Study ⁶ or other) 24hr profile
5	Specific validated prediction
6	Predictions from other sources (Defra noise maps ⁷ , etc.).
7	Generic levels

Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for screening
C	Correction applied for distance from source
D	Minimum level cut-off applied.

Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.

Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate
b	Data are considered representative of the prevailing sound climate, but variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate, (e.g. taken from Defra noise maps, etc.).

3.3 Future baseline methodology

Construction

- 3.3.1 The assessment of noise from construction activities assumes a baseline year of 2017. As a conservative assumption it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017.

⁶ Building Research Establishment (2002), *National Noise Incidence Study, 2000/2001*.

⁷ Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

- 3.3.2 Due to the duration of the construction work, and as the precise timing of the highest sound levels would be different in each location, using baseline sound levels for 2017 as the start of the construction period provides a reasonable worst case assessment.
- 3.3.3 The assessment of construction traffic is based on future baseline traffic flows for 2021, as a year representative of the middle of the construction period.

Operation

- 3.3.4 Changes in existing sound sources between 2012/2013 and 2026 may result in changes to baseline sound levels.
- 3.3.5 For major transportation sources, data for existing and future baseline operations have been reviewed. Where changes may occur between the existing baseline and future baseline (2026) situations, expected changes in baseline sound level have been derived. For example, expected changes in traffic flow, composition and speed have been used to calculate changes in sound emission from roads using the methodology from the Calculation of Road Traffic Noise⁸.
- 3.3.6 The changes to major sound sources which have been identified in this area are summarised in Table 3.

Table 3: 2026 future baseline changes in sound sources

Sound Source affected	Cause of change in levels	Change in sound levels (existing baseline to 2026 future baseline) (dB)	
		Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$
Coleshill Heath Road	Increased traffic flow	0.7	0.5
B4114 Birmingham Road	Increased traffic flow	0.9	0.5
Gilson Drive	Increased traffic flow	0.9	0.4
B4117 Gilson Road	Increased traffic flow	0.7	0.4
A446 Litchfield Road in the vicinity of Coleshill	Increased traffic flow	1.1	0.4
A446 Stonebridge Road	Increased traffic flow	1.0	0.4
A446 Litchfield Road in the vicinity of Water Orton	Increased traffic flow	0.9	0.5
B4117 Watton Lane through Water Orton	Increased traffic flow	0.9	0.4
Attleboro Lane, Water Orton	Increased traffic flow	0.7	0.3
Plank Lane, Water Orton	Increased traffic flow	0.7	0.7
B4118 Marsh Lane	Increased traffic flow	0.7	0.7
M6 motorway	Increased traffic flow	0.8	0.8
M6 Toll motorway	Increased traffic flow	0.8	0.9
M42 motorway	Increased traffic flow	0.8	0.3

⁸ Department of Transport (1988), *Calculation of Road Traffic Noise*.

4 References

Building Research Establishment (2002), *National Noise Incidence Study, 2000/2001*.

Defra, Noise Mapping England, <http://services.defra.gov.uk/wps/portal/noise/>; accessed 26 July 2013.

Department of Transport (1988), *Calculation of Road Traffic Noise*.